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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/574,027	03/23/2006	Ian David Stones	M03B197	8027

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EXAMINER	
EASTMAN, AARON ROBERT	

ART UNIT	PAPER NUMBER
3745	

NOTIFICATION DATE	DELIVERY MODE
01/22/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

LORETTA.SANDOVAL@EDWARDSVACUUM.COM

Office Action Summary	Application No.	Applicant(s)	
	10/574,027	STONES ET AL.	
	Examiner	Art Unit	
	Aaron R. Eastman	3745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 September 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *48-64* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *48-64* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed September 24, 2009 have been fully considered but they are not persuasive. Applicants argue on page 6 of the Amendment that "Schutz does not teach or suggest a pump having an inlet through which gas passes only part of it, either. On page 3 of the office action, Examiner cites a friction vacuum pump 1 as illustrated in FIG. 9 for such feature." Examiner does not cite Schütz et al. as disclosing a pump having an inlet through which gas passes only part of it. As stated in paragraph 5 of the previous Office Action (and repeated below), Schütz et al. is cited as disclosing a Gaede pump section in combination with and immediately downstream of a Holweck pump to create a pumping section. As discussed in the previous Office Action (and discussed below), this modification to Conrad et al. will create a pumping section having an inlet through which gas passes only part of it without moving any of the inlets of Conrad et al. Conrad et al. is modified to add a Gaede pump downstream of the Holweck pump(6 of Conrad et al.) creating a pumping section (comprising a Gaede and Holweck pump) having an inlet through which gas passes only part of it. This modification does not move or alter any of the inlets of Conrad et al.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 48-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over USP 5,733,104 (Conrad et al. hereinafter) in view of USP 5,695,316 (Schütz et al. hereinafter).

4. In re claim 48 Conrad et al. disclose a compound multi-port vacuum pump comprising first, second and third pumping sections, a first pump inlet (14) through which fluid can enter the pump and pass through each of the pumping sections towards a pump outlet, a second pump inlet (15) through which fluid can enter the pump and pass through only the second and third pumping sections towards the outlet, an optional third pump inlet (16) through which fluid can enter the pump and pass through only the third pumping section towards the outlet, and a fourth inlet (17) through which fluid can enter the pump and pass through towards the outlet (Fig. 6).

5. Conrad et al. do not disclose a fourth inlet through which fluid can enter the pump and pass through only part of the third pumping section towards the outlet. Conrad et al. disclose a fourth inlet (17) which bypasses the third pumping section (Holweck pump (6)).

6. Schütz et al. disclose a Gaede pump section (60-62, Fig. 9) in combination with and immediately downstream of a Holweck pump (55, 56) to create a pumping section (col. 4 line 44 - col. 5 line7).

7. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Conrad et al. by adding a Gaede pump section in combination with and immediately downstream of the Holweck pump to create a pumping section as taught in Schütz et al. for the purposes of increasing pump

effectiveness. This results in a fourth inlet (17) through which fluid can enter the pump and pass through only part (the Gaede pump portion) of the third pumping section towards the outlet.

8. In re claim 49 the Conrad et al. modification in re claim 48 discloses the pump according to claim 48 wherein at least one of the first and second pumping sections comprises at least one turbo-molecular stage (Fig. 6 of Conrad et al.).

9. In re claim 50 the Conrad et al. modification in re claim 48 discloses the pump according to claim 48 wherein both of the first and second pumping sections comprise at least one turbo-molecular stage.

10. In re claim 51 the Conrad et al. modification in re claim 48 discloses the pump according to claim 48 wherein the third pumping section is positioned relative to the second (15) and fourth (17) pump inlets such that fluid passing therethrough from the second pump inlet (15) follows a different path from fluid passing therethrough from the fourth pump inlet (17).

11. In re claim 52 the Conrad et al. modification in re claim 48 discloses the pump according to claim 51 wherein the third pumping section is positioned relative to the second (15) and fourth (17) pump inlets such that fluid passing therethrough from the fourth pump inlet (17) follows only part of the path of the fluid passing therethrough from the second pump inlet (15).

12. In re claim 53 the Conrad et al. modification in re claim 48 discloses the pump according to claim 48 wherein the third pumping section comprises at least one molecular drag stage.

13. In re claim 54 the Conrad et al. modification in re claim 48 discloses the pump according to claim 53 wherein the third pumping section comprises a multi-stage Holweck mechanism with a plurality of channels arranged as a plurality of helixes (see Fig. 4 of Conrad et al. detailing the Holweck mechanism).

14. In re claim 55 the Conrad et al. modification in re claim 48 discloses the pump according to claim 54 wherein the Holweck mechanism is positioned relative to the second (15) and fourth (17) pump inlets such that fluid passing therethrough from the fourth pump inlet (17) follows only part of the path of the fluid passing therethrough from the second pump inlet (15).

15. In re claim 56 the Conrad et al. modification in re claim 48 discloses the pump according to claim 48 wherein the third pumping section comprises at least one Gaede pumping stage and/or at least one aerodynamic pumping stage.

16. In re claim 57 the Conrad et al. modification in re claim 48 discloses the pump according to claim 54 wherein the Holweck mechanism is positioned upstream from said at least one Gaede pumping stage and/or at least one aerodynamic pumping stage.

17. In re claim 58 the Conrad et al. modification in re claim 48 discloses the pump according to claim 57 wherein the Holweck mechanism is positioned relative to the second (15) and fourth (17) pump inlets such that fluid entering the pump from the fourth pump inlet (17) does not pass therethrough.

18. In re claim 59 the Conrad et al. modification in re claim 48 discloses the pump according to claim 56 wherein said at least one aerodynamic pumping stage comprises at least one regenerative stage.

19. In re claim 60 the Conrad et al. modification in re claim 48 discloses the claimed invention except for wherein, in use, the pressure of the fluid exhaust from the pump outlet is equal to or greater than 10 mbar. It would have been obvious to one having ordinary skill in the art at the time the invention was made so that wherein, in use, the pressure of the fluid exhaust from the pump outlet is equal to or greater than 10 mbar, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch,* 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

20. In re claim 61 the Conrad et al. modification in re claim 48 discloses the pump according to claim 60 wherein the third inlet (16) is positioned such that fluid entering the pump therethrough passes through, of said sections, only the third pumping section towards the pump outlet.

21. In re claim 62 the Conrad et al. modification in re claim 48 discloses the pump according to claim 61 wherein the fluid entering the pump through the third inlet (16) passes through a greater number of stages of the third pumping section than fluid entering the pump through the fourth inlet (17).

22. In re claim 63 the Conrad et al. modification in re claim 48 discloses the pump according to claim 48 comprising a drive shaft (31) having mounted thereon at least one rotor element for each of the pumping sections.

23. In re claim 64 the Conrad et al. modification in re claim 48 discloses the differentially pumped vacuum system comprising a plurality of chambers (col. 1 lines 27-28 of Conrad et al.) and a pump according to claim 48 for evacuating each of the chambers.

Conclusion

24. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron R. Eastman whose telephone number is (571)270-3132. The examiner can normally be reached on Mon-Thu 9:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on (571) 272-4820. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Aaron R. Eastman/
Examiner, Art Unit 3745

/Edward K. Look/
Supervisory Patent Examiner, Art Unit 3745